

Appl. No. 09/980,326
Atty. Docket No. 7629
Amdt. dated 12/11/2003
Reply to Office Action of 9/30/03
Customer No. 27752

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-11. (canceled)

12. (currently amended) A process for making a granular detergent composition having a circularity less than about 30, an aspect ratio less than about 1.3 and wherein the product of the circularity and aspect ratio is less than 30 comprising the steps of:

- a) providing a ~~at least one~~ granular feed stream comprising particles of spray dried granules and detergent agglomerates, and optional detergent adjunct ingredients;
- b) passing said feed stream into a pre-mixer together with a binder to form a mixture;
- c) ~~b)~~ passing said mixture from step b) ~~granular feed stream~~ into a fluidized bed granulator having a bed plate;
- d) introducing a binder into said fluidized bed granulator in the form of droplets;
- e) ~~e)~~ at least partially agglomerating said feed stream in operating said fluidized bed granulator at a Stokes number less than 1 for about 1 to about 20 minutes residence time, at from about 100 to about 600mm depth of unfluidized bed, at a droplet size not more than 100 microns, at about 150 to about 1600mm of spray height from the fluid bed plate, at from about 0.1 to about 4.0m/s of fluidizing velocity and from about 12 to about 200°C bed temperature, to form detergent agglomerates;
- f) ~~d)~~ sizing said detergent agglomerates to separate oversized particles from said detergent agglomerates; and
- g) ~~e)~~ optionally, re-introducing said oversized particles to said process.

13. (previously presented) The process for making the granular detergent composition of Claim 12, further comprising the step of milling said oversized particles before re-introduction into said process.

14. (previously presented) The process for making the granular detergent composition of Claim 13, wherein said oversized particles are re-introduced into any unit operation in said process or into said fluid bed granulator.

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15. (previously presented) The process for making the granular detergent composition of Claim 12, further comprising the step of passing said granular feed stream through at least one pre-mixer before introduction into said fluid bed granulator and re-introducing at least a portion of said oversized particles to said pre-mixer.

16. (previously presented) The process for making the granular detergent composition of Claim 15, wherein said granular feed stream is passed through at least two pre-mixers and at least a portion of said oversized particles are reintroduced in either or both of said pre-mixers.

17. (currently amended) The process for making the granular detergent composition of Claim 13, further comprising the steps of passing said detergent agglomerates after step (f) ~~said screening step~~ to a finishing step and re-introducing at least a portion of said oversized particles after milling to said finishing step.

18. (previously presented) The process as claimed in Claim 12 further comprising the step of extracting undersized particles from said fluidized bed and re-introducing said undersized particles to said process.

19. (previously presented) The process as claimed in Claim 18 further comprising the step of passing said granular feed stream through at least one pre-mixer before introduction into said fluid bed granulator and re-introducing at least a portion of said undersized particles to said at least one pre-mixer.

20. (previously presented) The process as claimed in Claim 19, wherein said granular feed stream is passed through at least two pre-mixers and at least a portion of said oversized particles are reintroduced in either or both of said pre-mixers.

21. (previously presented) The process as claimed in Claim 12 wherein said fluidized bed granulator is an internally re-circulating fluid bed and undersized particles are re-circulated internally within the fluidized bed.

22. (previously presented) The process as claimed in Claim 16 further comprising the step of screening said granular feed stream upon exiting said pre-mixer to separate oversized particles and re-introducing said oversized particles to the process.

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23. (previously presented) The process as claimed in Claim 22 further comprising the step of passing said granular feed stream through at least two pre-mixers, screening said feed stream upon exiting either or both of said pre-mixers to separate oversized particles and re-introducing at least a portion of said oversized particles in either or both of said pre-mixers.

24. (previously presented) The process as claimed in Claim 12 wherein said fluidized bed granulator is operated at a flux number within the range of from about 2.5 to about 4.5.

Claims 25-33 (canceled)